Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

March 9th, 2018

VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: Proposal of RED Technologies for Certification as a SAS administrator; Response to Request for Supplemental Information (GN Docket 15-319)

Dear Ms. Dortch:

In response to FCC inquiry in the above-captioned proceeding[1], and the FCC's request for supplemental information, RED Technologies hereby submits this supplement to our proposal[Error! Bookmark not defined.] to become a Spectrum Access System ("SAS") administrator.

RED Technologies welcomes the opportunity to submit this supplemental information to the Commission in support of our proposal to be designated as a SAS administrator.

While we believe we have addressed all the Commission's questions as detailed below, we welcome the opportunity to engage the Commission in additional discussion as needed.

As stated in our proposal, RED Technologies can perform all of the duties and responsibilities of the SAS administrator outlined in the relevant Public Notices.

To help simplify our response, we have shown below each question from the Commission's request with our response below:

[1] *Wireless Telecommunications Bureau and Office of Engineering and Technology Establish Procedure and Deadline for Filing Spectrum Access System (SAS) Administrators(s) and Environmental Sensing Capability (ESC) Operator(s) Applications,* GN Docket No. 15-319, Public Notice, 30 FCC Rcd 14170, 14174-76 (WTB / OET 2015)*; Wireless Telecommunications Bureau and Office of Engineering and Technology Establish "Second Wave" Deadline for Proposals From Prospective Spectrum Access System (SAS) Administrator(s) and Environmental Sensing (ESC) Operators(s),* Public Notice, GN Docket No. 15-319, 32 FCC Rcd 2973 (WTB / OET 2017).

[2] *Wireless Telecommunications Bureau and Office of Engineering and Technology Establish Procedure and Deadline for Filing Spectrum Access System (SAS) Administrator(s) and Environmental Sensing Capability (ESC) Operator(s) Applications (GN Docket No. 15-319); Proposal by RED Technologies for Spectrum Access System Administrator; (May 5th, 2017) ("Proposal").*

1. Please discuss in detail how RED will facilitate coordination for GAA users operating Category B CBSDs. (96.53(j))

Consistent with section 96.53(j) and Wireless Innovation Forum standards, the RED Technologies SAS will facilitate coordination for GAA users operating Category B CBSDs.

The RED Technologies SAS will expose information which may be used by GAA users to identify, based on the current CBSD grants and on the location of the neighbor incumbents, the most suitable channels to be used by a CBSD at a given location.

The RED Technologies SAS will implement the GAA Spectrum Coordination (GSC) function used by SASs to coordinate GAA resource allocation to CBSDs including Category B CBSDs with the goal to mitigate interference among GAA users. The GSC function allows multiple SASs to collaborate, exchange relevant information, and achieve consistent GAA resource allocations. The GSC function is under specification by the Wireless Innovation Forum as part of its Release 2 standards.

2. Please include an affirmation that RED will comply with all applicable international agreements. (96.53(n))

Consistent with section 96.53(n) and Wireless Innovation Forum standards, the RED Technologies SAS will comply with all applicable international agreements.

3. Clarify the process used for interference reporting. Specifically, address whether a service request is used for reporting interference and what exactly can be requested through the service request process. Will service requests be used for interference reporting or is there a separate process? (pgs. 28; 4 1-43; 55) (96.53(o))

Consistent with interference management best practices and as required by section 96.53(o), RED Technologies accepts reports of interference, requests for additional protection from protected users, including incumbent via RED Technologies SAS Service Center and its web-based portal (see Figure 1).

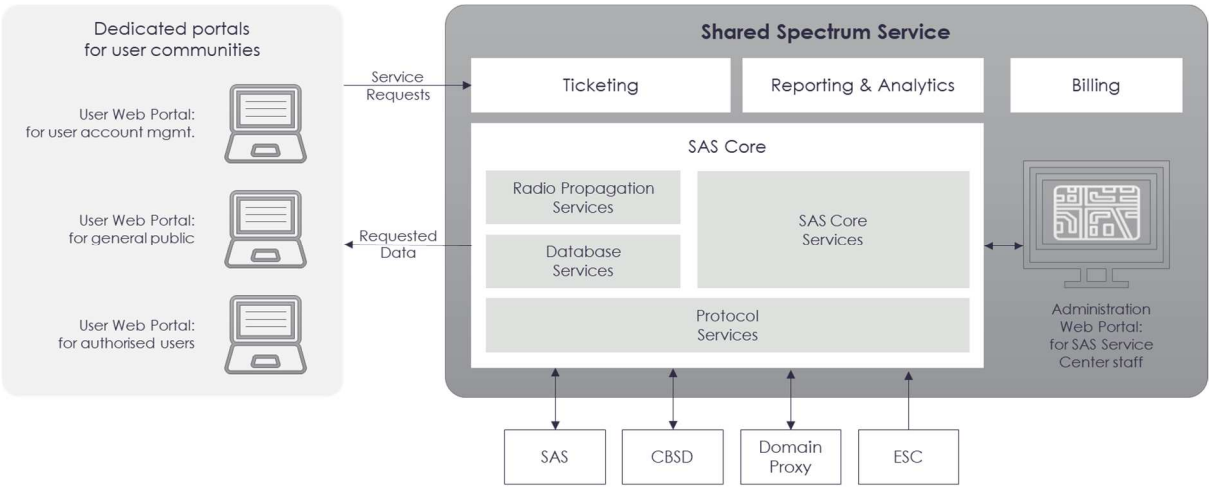

Figure 1: RED Technologies SAS Service Center

The process involves both a ticketing tool to track individual service request and the Service Center staff to handle the service request. The purpose of having human interaction versus a fully automated process is that interference reports or requests for additional protection may require in depth analysis and coordinated response from other SAS Administrators.

When an authorized user identifies an interference issue in its protection zone and/or site, he/she can send a request to RED Technologies SAS Service Center to investigate the situation.

The authorized user to issue such report or request can be:

- Federal Government entities,
- Operators of incumbent fixed-satellite earth stations,
- Operators of incumbent wireless broadband service stations,
- Operators of networks protected by Priority Access licenses,
- Operators of network equipment licensed by GAA rules,
- Other SAS Administrators,
- ESC Operators.

The nature of the reports or requests can vary widely and therefore we designed the web-based portal User Interface (UI) as a mix of check boxes and free text entry boxes (see **Figure 2**: Interference Reporting Service Request).

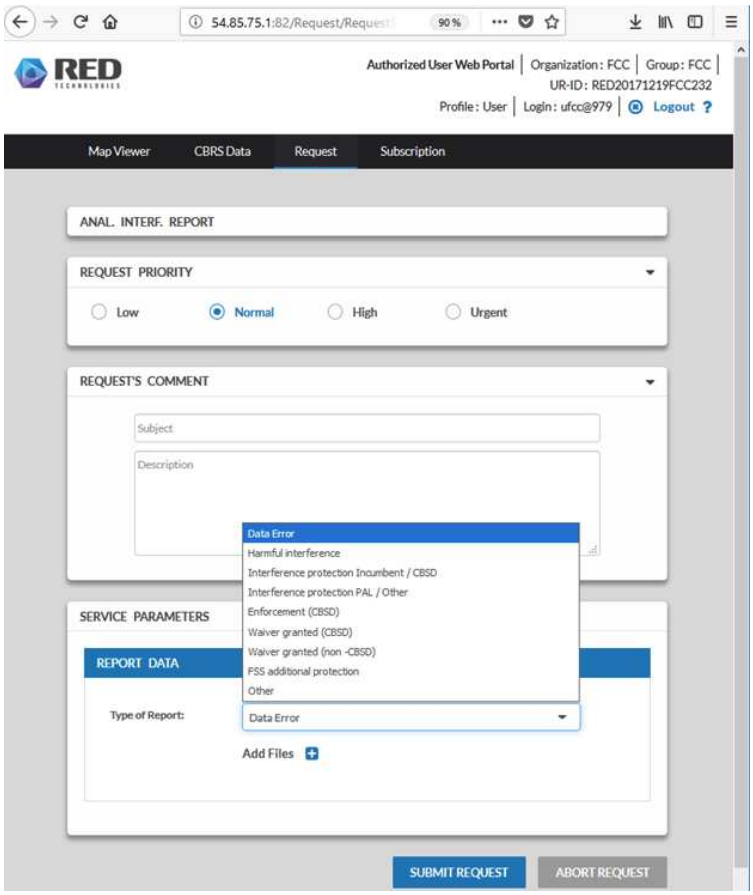

Figure 2: Interference Reporting Service Request

Additionally, any request or report can be supplemented with extra information via attached documents such as logs, screenshots or worksheets.

A detailed workflow is also given in the proposal, section 5.1.2.7.

4. How will RED register, authenticate, and authorize operations of CBSDs consistent with § 96.57? Does it plan to follow WinnForum or use another process? RED refers to § 96.39, which is a CBSD registration requirement. The SAS registration requirement can be found in § 96.57. Please update your proposal accordingly. (pgs. 57; 62) (96.57(a))

Regarding registering, authenticating, and authorizing operations of CBSDs, RED Technologies SAS will comply with section 96.57 and Wireless Innovation Forum standards.

It looks like the confusion stems from our reference made to section 96.39 in our proposal, section 5.1.2.8.

We understand section 96.39 is a device/operator requirement, not a SAS requirement.

5. What protocols will be in place to respond to instructions from the President of the United States and other Federal government entities? Please clarify whether RED intends that the President would have to make a "request" in order to shut down CBSDs. Instructions from the President and appropriate Federal government entities must be addressed immediately. (96.63(l))

Consistent to section 96.63(l), RED Technologies shall respond to instructions issued directly by the President of the United States and other Federal government entities.

Whenever possible, RED Technologies will consult with its contacts at the FCC to confirm the source and validity of the orders, otherwise RED Technologies will use its best judgment to determine the validity of the orders.

In the event of Force Majeure where CBSDs must be shut down promptly, it is not expected that the President of the United States and other Federal government entities use the web-based portal and make a service request to the RED Technologies SAS service center; instead RED Technologies permits written and/or verbal orders to be issued using RED Technologies SAS Administrator email and/or phone primary contact details.

RED Technologies shall act immediately in accordance with the orders issued.

6. What mechanism will RED use to process and retain acknowledgements by all entities registering CBSDs that they understand the risk of possible interference from federal incumbent radar operations in the band? (99.55(e))

Consistent with section 99.55(e), the organization who is supposed to operate CBSDs (those CBSDs to be managed by the RED Technologies SAS), at the time of its subscription to RED Technologies SAS Service Center, shall acknowledge the following statement (see Figure 3):

“All members of my organization understand the risk of possible interference from federal incumbent radar operations in the band.”

If the organization does not acknowledge the rule, its subscription cannot be completed and no CBSD from that organization will be allowed to be successfully registered to the RED Technologies SAS.

RED Technologies will retain records of the organization’s acknowledgement, indicating the date and time of the acknowledgement.

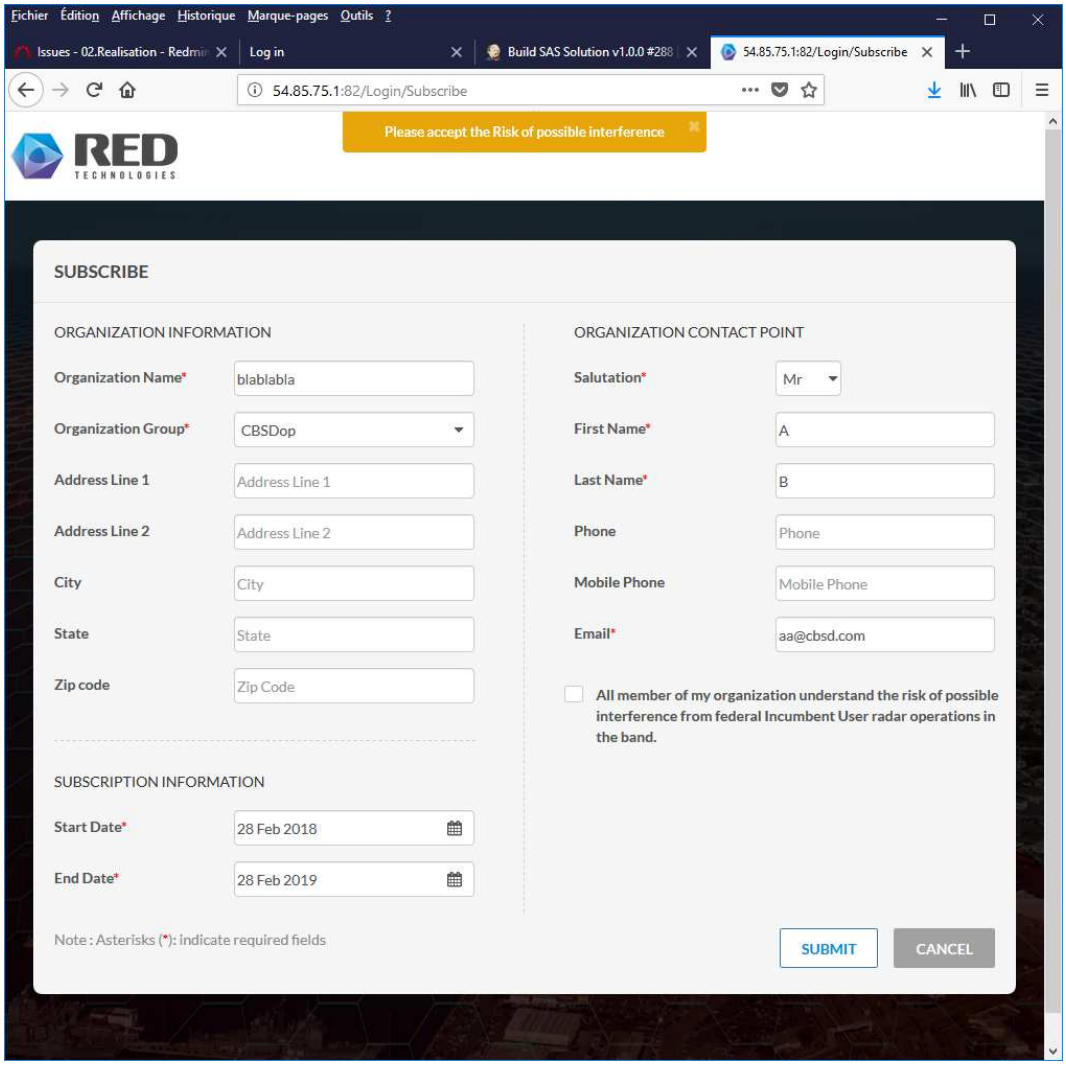

Figure 3: Organization subscription service

7. Please describe how RED will obtain FSS earth station registration information from the Commission. (96.17(d)(1))

The Commission's rules require the RED Technologies SAS to protect FSS earth stations authorized to operate in the 3600 -3700 MHz band and FSS earth stations responsible for critical TT&C that operate in the 3700-4200 MHz band.

The RED Technologies SAS maintains daily and automatically the latest FSS earth station registration information.

FSS registration information is used by the RED Technologies SAS to ensure that its managed CBSDs protect licensed, registered earth stations from harmful interference consistent with the parameters of section 96.17 of the Commission's rules.

It is RED Technologies intention to use the newly FSS registration database (www.fcc.gov/cbrs-protected-fss-sites) and its associated database API (https://api.fcc.gov/rest/fss/v1/allsitedata) to access such information daily.

This API allows properly authenticated Restful API calls to return JSON data to the RED Technologies SAS which resides outside of the FCC network and allows to download FSS Earth Station Antenna Registration System data as directed by the FCC.

8. Please affirm that CBSDs and End User Devices must not cause harmful interference to and must accept interference from federal Incumbent Users authorized to operate in the 3 500-3700 MHz band. (96.15(b)(1))

Consistent with section 96.15(b)(1) and Wireless Innovation Forum Standards, the RED Technologies SAS will ensure CBSDs will not cause harmful interference to current and future federal Incumbent Users authorized to operate in the 3500-3700 MHz band.

However, it can be noted that consistent with Wireless Innovation Forum Release 1 Standards, End User device not causing interference or accepting interference is not of SAS responsibility.

9. Describe in detail the process RED will use for confirming-- within 300 seconds after the ESC communicates that it has detected a signal from a federal system in a given area, or within 300 seconds after RED receives other notification of current federal incumbent use of the band-- that the operation of the CBSDs has been suspended or relocated to another unoccupied frequency. (96.15(b)(4))

Consistent with section 96.15(b)(4) and Wireless Innovation Forum Standards, after the ESC communicates that it has detected a signal from a federal system in a given area, or after RED receives other notification of current federal incumbent use of the band, the RED Technologies SAS instructs immediately any CBSD operating on a channel being used by a Federal Incumbent User to either cease operation or move to a different frequency not being used by a Federal Incumbent User.

Provisions entitled in Wireless Innovation Forum Release 1 Standards and to be implemented by the certified SASs and the certified CBSDs ensure-- within 300 seconds after the ESC communicates that it has detected a signal from a federal system in a given area, or within 300 seconds after RED receives other notification of current federal incumbent use of the band-- that the operation of the CBSDs has been suspended or relocated to another unoccupied frequency.

RED Technologies SAS Service Center is equipped with an Administration web-based portal (see **Figure 4**) that shows the current operation status of all SAS managed CBSDs i.e. whether CBSDs are registered and/or granted access to the band along with frequency allocation details.

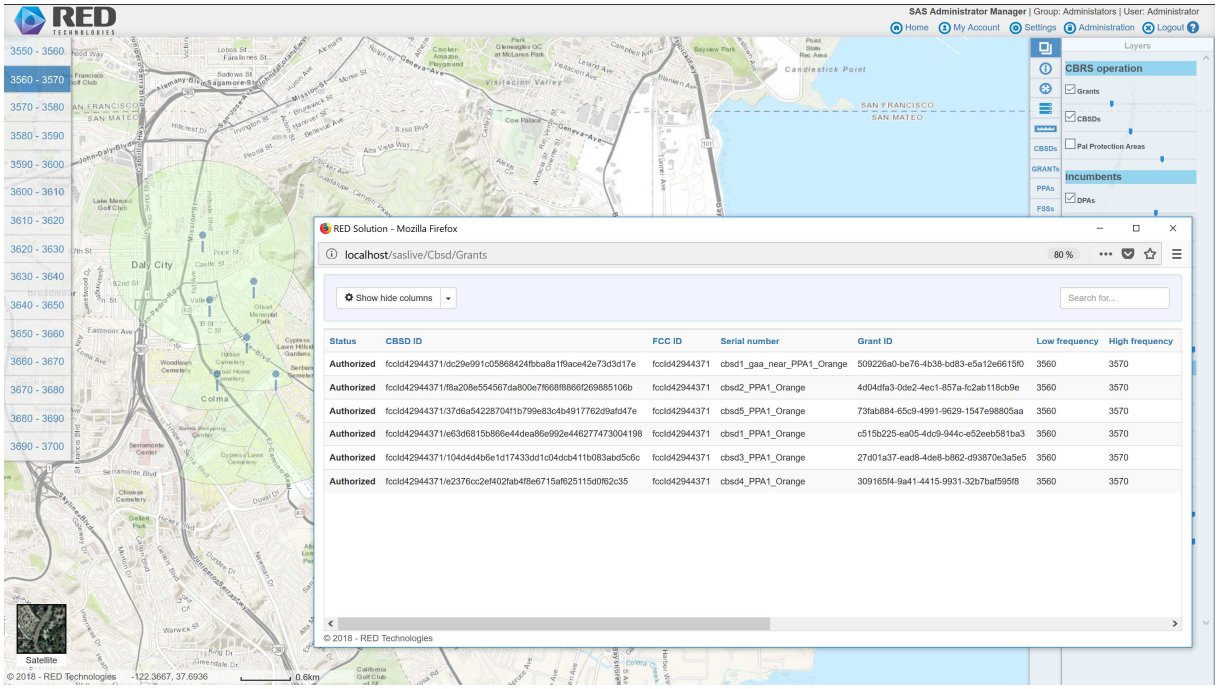

Figure 4: active grant table

Please contact the undersigned with any questions about this submission.

Respectfully submitted,

_____/s/_____
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cc:
(via email)
Becky Schwartz, Wireless Telecommunications Bureau
Paul Powell, Wireless Telecommunications Bureau
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